

wall, such that when the container is coupled to the coupling member the polymer array is substantially perpendicular to the rotational axis.

52. (New) A device as in claim 44, wherein the coupling member comprises an elongate slot formed within the side wall.

REMARKS

Claims 41-50 are pending in this application. Claims 41-43 have been amended. Support for amending Claim 41 can be found throughout the specification including the drawings.

New claims 51 and 52 have been added to claim a holding device that has a coupling member formed in one of the walls to hold the polymer array substantially perpendicular to the rotational axis. Since such a feature is not taught by the cited art, claims 51 and 52 are in condition for allowance.

Attached hereto as Appendix A captioned "Version with Markings to show changes made" is a marked-up version of the changes made to the claims by the current amendment. In addition, for the convenience of the Examiner, all claims now pending following entry of the present Amendment and Response are reproduced in Appendix B captioned "Pending Claims."

Rejection under 35 U.S.C. §112

Claims 41-50 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office Action states that "it is unclear if the 'polymer array' is part of the claimed structure" in Claims 41 and 42. The Office Action also alleges lack of antecedent basis for the term "the probe array" in Claim 43. Furthermore, the Office Action states the terms "closely" and "narrow" in Claim 43 are unclear. In addition, the Office Action states that "it is unclear what range of angles is being recited" in Claim 44.

It is noted that all that the patent laws require is that the claims be sufficiently clear that those skilled in the art are able to determine whether a product of interest is (or is not) within the scope of the claims. *In re Mercier*, 185 USPQ 774 (C.C.P.A. 1975) (claims sufficiently define an invention so long as one of ordinary skill can determine what subject matter is or is not within the scope of the claims). As discussed in detail below, the present claims comply with this standard.

Claim 41 is directed to *inter alia* "A holding device adapted to receive at least one container containing a polymer array...." Thus, it is clear from the preamble of Claim 41 that the polymer array is not part of the claimed structure but rather is part of the container which can be placed within the holding device.

In contrast, Claim 42 is directed to a system which comprises "at least one container containing a polymer array and a fluid; and a holding device...[comprising] at least one coupling member constructed and arranged to couple the container to at least one of the walls." Thus, the system is comprised of two different devices, namely a polymer array container and a holding device for holding the container. Moreover, two required devices in the system claimed in Claim 42 are listed individually in separate paragraphs. Therefore, it would be readily apparent to one skilled in the art that the polymer array container is part of the system claimed.

As for the terms "narrow" and "closely" in Claim 43, Applicants respectfully point out that the description of the invention is the role of the specification, not the claims. *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 USPQ2d 1081 (Fed. Cir. 1986). In addition, the amount of detail required to be included in the claims is not to be viewed in the abstract but in conjunction with the specification. *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 225 USPQ 634 (Fed. Cir. 1985). The terms "narrow" and "closely" are used in describing the polymer array container. The specification discloses that such polymer "arrays are packaged within a housing, like those described in, e.g., pending U.S. Patent Application Serial Nos. 08/624,312,...08/485,452,... 08/528,173,...and published PCT Application No. WO95/33846." See page 1, line 36, to page 2, line 3. The specification also discloses that the holding device is particularly

useful with containers that "are relatively narrow in geometry, e.g., defined by two closely spaced apart planar walls. Such [containers] are described in co-pending U.S. Patent Application Serial Nos. 08/624,312, 08/485,452 and 08/528,173 and PCT Application No. WO95/33846...." See page 5, lines 14-22. Because the containers are fully described in the cited patent applications that are incorporated by reference, one skilled in the art having read the disclosure of the present invention and the cited patent applications will have no difficulty determining the meaning of the terms "closely" and "narrow."

The term "probe array" in Claim 43 is a typographical error which has been corrected by replacing the term "probe" with the term "polymer."

As for the range of angles contemplated in Claim 44, it is submitted that one skilled in the art would have no difficulty determining whether a particular angle is within the scope of the claim. As stated above, all that the patent laws require is that the claims be sufficiently clear that those skilled in the art are able to determine whether a product of interest is (or is not) within the scope of the claims. One skilled in the art can readily determine whether a particular angle of the walls is within the scope of Claim 44, for example, simply by observing the fluid motion within the chamber during rotation of the holding device along its rotational axis. If the fluid is agitated during rotation of the holding device, then the angle of the wall is within the scope of Claim 44.

In view of the above, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. §112, second paragraph.

Rejection under 35 U.S.C. §102

Claims 41-49 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by a various cited references each individually. Applicants respectfully request reconsideration of this rejection as none of the cited references discloses all the limitations or specific system configurations claimed by the present application.

Claims are anticipated if, and only if, each and every element as set forth in the claim is found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of*

California, 2 USPQ2d 1051 (Fed. Cir. 1989). Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the...claim.” *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913 (Fed. Cir. 1989).

The Wells Patent

Claims 41-47 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 423,362, issued to Wells (the “Wells patent”). The Wells patent is directed to a device for churning milk or cream. The “body” A of the device discussed in the Wells patent is “a rectangular frame”. See Col. 2, lines 78-79. The vessels are attached to the rectangular frame by screws E as well as flanged holders B which are secured by bolts. See Col. 2, lines 85-94. Thus, the coupling members in the Wells patent are removably attached to the rectangular frame.

In contrast, the device claimed in Claim 41 of the present application comprises one or more walls that comprise a non-removable coupling member. Since the coupling member of the device discussed in the Wells patent is removably attached to the frame, whereas the coupling member of the present invention is non-removable, Applicants submit that the rejection of Claim 41 as allegedly being anticipated by the Wells patent is improper.

Claim 42 of the present application is directed to a system which comprises (1) a container containing a polymer array and a fluid and (2) a holding device. The polymer array refers to a plurality of polymers coupled to a substrate in different known locations. See, for example, page 1, lines 32-35.

The Wells patent is directed to a device for churning milk or cream. The Wells patent does not disclose a system which comprises a container containing a polymer array. Therefore, the rejection of Claims 42-47 as allegedly being anticipated by the Wells patent is also improper. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. §102(b) based on the Wells patent be withdrawn.

The Shumway Patent

Claims 41, 42 and 44-49 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 493,046, issued to Shumway (the “Shumway patent”).

As discussed above, Claim 41 of the present invention is directed to a holding device that comprises coupling member within the walls for coupling a container to the walls.

The Shumway patent is directed to a device for shaking crated bottles. The crate comprises “a series of interior division walls or partitions to provide a series of compartments each designed to receive and snugly hold a bottle.” Col. 1, lines 44-47. Thus, there is no coupling member within the walls of the device disclosed in the Shumway patent. Since the device disclosed in the Shumway patent lacks a coupling member within the walls, Claim 41 of the present invention is not anticipated by the Shumway patent.

Claims 42 and 44-49 of the present application are directed to a system that comprises a combination of a holding device and a container containing a polymer array and a fluid.

The Shumway patent does not disclose a system that comprises a holding device and a polymer array container. In fact, the Shumway patent does not disclose any polymer array container.

Since some of the elements of the present invention are not disclosed in the Shumway patent, the rejection of Claims 41, 42 and 44-49 based on the Shumway patent is improper. Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. §102(b) based on the Shumway patent.

The Neuner Patent

Claims 41, 42 and 44-47 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 4,329,068, issued to Neuner (the “Neuner patent”).

The Neuner patent discusses a mixing machine or a tumbler box in which the volumetric tubes are held in place by “a floor and a lid which engage the ends of the volumetric tubes to prevent them from shifting in the tumbler box....” See the Abstract. See also Col. 3, line 48. The tumbler box also comprises a rack structure which is designed to “hold the containers in upright positions in spaced apart relation to one another....” See Claim 1 on Col. 5, lines 41-45. See also Col. 2, lines 57-65. Thus, the volumetric tubes are held in place by a combination of the rack structure and compression of the lid and the floor of the tumbler box against the volumetric tubes. The device discussed in the Neuner patent does not disclose any coupling member within the walls for coupling a container to the walls.

Since the walls of the device discussed in the Neuner patent do not comprise a coupling member, the rejection of Claim 41 of the present application under 35 U.S.C. §102(b) based on the Neuner patent is improper.

As for the rejection of Claims 42 and 44-47 based on the Neuner patent, it is submitted that the Neuner patent does not disclose any polymer array container. Thus, since Claims 42 and 44-47 requires a polymer array container, the rejection of Claims 42 and 44-47 based on the Neuner patent is also improper. Accordingly, Applicants request that the rejection under 35 U.S.C. §102(b) based on the Neuner patent be withdrawn.

Rejection under 35 U.S.C. §103

Claim 50 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over the Neuner patent in view of U.S. Patent No. 5,753,187, issued to Reynolds et al. (hereinafter the “Reynolds et al. patent”). In particular, the Office Action alleges that “it would have been obvious to one skilled in the art to have disposed the device of [the] Neuner [patent]...in an oven to controlling temperature of chemical experiments as taught by [the] Reynolds [et al. patent]....” See the sentence bridging pages 5 and 6 of the Office Action.

If one were to combine the teachings of the Neuner patent and the Reynolds et al. patent in a manner suggested in the Office Action, the resulting device

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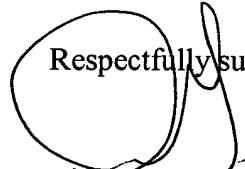
will be a tumbler box containing volumetric tubes that is placed inside an oven. This combination still lacks a polymer array container. Thus, the Reynolds et al. patent does not make up the insufficiency of the Neuner patent.

Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

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APPENDIX A
VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 41-43 have been amended as follows.

41. (Amended Herein) A holding device adapted to receive at least one container containing a polymer array and a fluid, the holding device comprising:

 a body with a rotational axis;

 a pair of end members extending from the rotational axis; and

 one or more walls extending between the end members parallel to the rotational axis; ~~and~~, and wherein said walls comprise

 at least one non-removable coupling member constructed and arranged to couple the container to ~~at least one of the said~~ walls, such that when the container is coupled to the coupling member the polymer array is substantially perpendicular to the rotational axis.

42. (Amended Herein) A system for facilitating the mixing of a fluid, the system comprising:

 at least one container containing a polymer array and a fluid; and

 a holding device comprising a body with a rotational axis, a pair of end members extending from the rotational axis, one or more walls extending between the end members parallel to the rotational axis and at least one coupling member constructed and arranged to couple the container to at least one of the walls, such that when the container is coupled to the coupling member the polymer array is substantially perpendicular to the rotational axis.

43. (Amended Herein) A system as in claim 42, wherein the container defines a chamber, the chamber including a pair of closely spaced-apart faces that are separated by walls to define a narrow interior, wherein one of the faces defines a planar surface on which the probe polymer array is disposed.

APPENDIX B
PENDING CLAIMS

41. (Amended Herein) A holding device adapted to receive at least one container containing a polymer array and a fluid, the holding device comprising:
a body with a rotational axis;
a pair of end members extending from the rotational axis; and
one or more walls extending between the end members parallel to the rotational axis, and wherein said walls comprise at least one non-removable coupling member constructed and arranged to couple the container to said walls, such that when the container is coupled to the coupling member the polymer array is substantially perpendicular to the rotational axis.

42. (Amended Herein) A system for facilitating the mixing of a fluid, the system comprising:

at least one container containing a polymer array and a fluid; and
a holding device comprising a body with a rotational axis, a pair of end members extending from the rotational axis, one or more walls extending between the end members parallel to the rotational axis and at least one coupling member constructed and arranged to couple the container to at least one of the walls, such that when the container is coupled to the coupling member the polymer array is substantially perpendicular to the rotational axis.

43. (Amended Herein) A system as in claim 42, wherein the container defines a chamber, the chamber including a pair of closely spaced-apart faces that are separated by walls to define a narrow interior, wherein one of the faces defines a planar surface on which the polymer array is disposed.

44. A system as in claim 43, wherein the walls of the chamber are set at angles sufficient to agitate the fluid when rotated.

45. A system as in claim 42, wherein the container is only partially filled with the fluid to form a bubble therein.

46. A system as in claim 45, wherein the fluid contains at least one target molecule and the polymer array contains complementary probe sequences, wherein agitation of the fluid by the bubble increases the hybridization rate between the target molecule and the probe sequences.

47. A system as in claim 42, wherein the end members are perpendicular to the walls.

48. A system as in claim 42, wherein the coupling member comprises a pair of rails fixedly attached to one of the walls to form a slot for receiving the container.

49. A system as in claim 48, wherein the rails are perpendicular to the wall.

50. A system as in claim 42, further comprising an oven, wherein the holding device is rotatably disposed in the oven.

51. (New) A holding device that is adapted to receive at least one container containing a polymer array and a fluid, the holding device comprising:
a body having a rotational axis;
a pair of end members extending from the rotational axis;
one or more walls extending between the end members parallel to the rotational axis;

at least one coupling member formed in one of the walls that is constructed and arranged to engage a side of the container to couple the container to the wall, such that when the container is coupled to the coupling member the polymer array is substantially perpendicular to the rotational axis.

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52. (New) A device as in claim 44, wherein the coupling member comprises an elongate slot formed within the side wall.

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